AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the

application:

LISTING OF CLAIMS:

1. (original):   A coordinator polling list making apparatus comprises:

a controlled contention frame transmitter, which when making a polling list is

requested, generates a controlled contention frame and transmits the controlled contention frame

to stations on a network through a predetermined channel using a broadcast method after a

period of time corresponding to a priority inter-frame space lapses since receipt of the request of

making a polling list;

a reservation request frame receiver, which receives a reservation request frame

from each of the stations through the predetermined channel as a response to the controlled

contention frame during a controlled contention interval designated by the controlled contention

frame; and

a polling list making unit, which when the reservation request frame receiver

receives the reservation request frame, allocates a poll frame transmission sequence to the

stations, from which the reservation request frame is received, using a first come first serve

method based on a sequence in which reservation request frames arrive and makes a polling list

comprising the poll frame transmission sequence.

2. (original):   The coordinator polling list making apparatus of claim 1, further

comprising:

a polling frame making request unit, which requests to make the polling list when the polling list is not made or when all reservation request frames are not received from the stations having transmitted the reservation request frames during the controlled contention interval; and

a poll frame transmitter, which transmits a poll frame to each of the stations, having transmitted the reservation request frames that are received by the reservation request frame receiver, through the predetermined channel according to the poll frame transmission sequence comprised in the polling list made by the polling list making unit.

3. (original): The coordinator polling list making apparatus of claim 2, wherein a length of the controlled contention interval is proportional to the number of stations on the network.

4. (original): The coordinator polling list making apparatus of claim 2, wherein the network is a basic service set defined in IEEE 802.11 wireless LAN standards.

5. (original): The coordinator polling list making apparatus of claim 4, wherein the controlled contention frame comprises a frame control field, a period/ID field, a receiver address field, a basic service set ID field, a controlled contention interval length field, and a frame inspection sequence field;

the reservation request frame comprises a frame control field, a period/ID field, a receiver address field, a basic service set ID field, a quality of service control field, an association ID field, and a frame inspection sequence field;

the poll frame comprises a frame control field, a period/ID field, a receiver

address field, a basic service set ID field, a quality of service control field, a data

transmitting/receiving period length field, and a frame inspection sequence field; and

the quality of service control field indicates a data rate, a burst size, a delay

bound, and a jitter bound.

6. (currently amended):   A station polling list making apparatus comprising:

a controlled contention frame receiver, which receives a controlled contention

frame through a predetermined channel from a coordinator station among stations on a network;

and

a reservation request frame transmitter, which when the controlled contention

frame is received by the controlled contention frame receiver, contends for use of the

predetermined channel according to a user priority value of a data frame during a controlled

contention interval designated by the controlled contention frame so as to acquire an exclusive

right of using the predetermined channel, generates a reservation request frame as a response to

the controlled contention frame when the exclusive right is acquired, and transmits the

reservation request frame to the coordinator station through the predetermined channel;

wherein the reservation request frame transmitter sets a coordination inter-frame

space value and a contention window value according to the user priority value, detects whether

the predetermined channel is being used after a period of time corresponding to the coordination

inter-frame space value and a back-off time corresponding to the contention window value lapse,

acquires the exclusive right of using the predetermined channel if the predetermined channel is

not being used, and does not acquires the exclusive right of using the predetermined channel and

resets the contention window value to be extended using a back-off algorithm if the

predetermined channel is being used.

7. (canceled).

8. (original):   The station polling list making apparatus of claim 6, further comprising:

a poll frame receiver, which receives a poll frame transmitted through the

predetermined channel from the coordinator station according to polling frame transmission

sequence comprised in a polling list; and

a data frame transmitter, which when the poll frame is received by the poll frame

receiver, transmits the data frame to a destination station among the stations through the

predetermined channel during a data transmitting/receiving period designated by the poll frame.

9. (original):   The station polling list making apparatus of claim 8, wherein a length of

the controlled contention interval is proportional to the number of stations.

10. (original):   The station polling list making apparatus of claim 8, wherein the

network is a basic service set defined in IEEE 802.11 wireless LAN standards.

11. (original):   The station polling list making apparatus of claim 10, wherein the

controlled contention frame comprises a frame control field, a period/ID field, a receiver address

field, a basic service set ID field, a controlled contention interval length field, and a frame

inspection sequence field;

the reservation request frame comprises a frame control field, a period/ID field, a receiver address field, a basic service set ID field, a quality of service control field, an association ID field, and a frame inspection sequence field;

the poll frame comprises a frame control field, a period/ID field, a receiver address field, a basic service set ID field, a quality of service control field, a data transmitting/receiving period length field, and a frame inspection sequence field; and

the quality of service control field indicates a data rate, a burst size, a delay bound, and a jitter bound.

12. (original):   An apparatus for making a polling list, comprising:

a coordinator polling list making apparatus, which when making a polling list is requested, generates a controlled contention frame and transmits the controlled contention frame to stations on a network through a predetermined channel using a broadcast method after a period of time corresponding to a priority inter-frame space lapses since receipt of the request of making a polling list, and when a reservation request frame from each of the stations is received as a response to the controlled contention frame through the predetermined channel during a controlled contention interval designated by the controlled contention frame, allocates a poll frame transmission sequence to the stations, from which the reservation request frame is received, using a first come first serve method based on a sequence in which reservation request frames arrive and makes a polling list comprising the poll frame transmission sequence; and

a station polling list making apparatus, which when the controlled contention frame is received through the predetermined channel from the coordinator polling list making apparatus, contends for use of the predetermined channel according to a user priority value of a

data frame during the controlled contention interval designated by the controlled contention

frame so as to acquire an exclusive right of using the predetermined channel, and when the

exclusive right is acquired, generates a reservation request frame as a response to the controlled

contention frame and transmits the reservation request frame to the coordinator polling list

making apparatus through the predetermined channel.

13. (original):   The apparatus of claim 12, wherein the coordinator polling list

making apparatus requests to make the polling list when the polling list is not made or when all

reservation request frames are not received from the stations having transmitted the reservation

request frames during the controlled contention interval, and transmits a poll frame to each of the

stations, having transmitted the reservation request frames that are received, through the

predetermined channel according to the poll frame transmission sequence comprised in the

polling list; and

when the station polling list making apparatus receives the poll frame transmitted

through the predetermined channel from the coordinator polling list making apparatus according

to the polling frame transmission sequence comprised in the polling list, the station polling list

making apparatus transmits the data frame to a destination station among the stations through the

predetermined channel during a data transmitting/receiving period designated by the poll frame.

14. (original):   The apparatus of claim 13, wherein a length of the controlled

contention interval is proportional to the number of stations.

15. (original):   The apparatus of claim 13, wherein the network is a basic service

set defined in IEEE 802.11 wireless LAN standards.

16. (original):   The apparatus of claim 15, wherein the controlled contention frame

comprises a frame control field, a period/ID field, a receiver address field, a basic service set ID

field, a controlled contention interval length field, and a frame inspection sequence field;

the reservation request frame comprises a frame control field, a period/ID field, a

receiver address field, a basic service set ID field, a quality of service control field, an

association ID field, and a frame inspection sequence field;

the poll frame comprises a frame control field, a period/ID field, a receiver

address field, a basic service set ID field, a quality of service control field, a data

transmitting/receiving period length field, and a frame inspection sequence field; and

the quality of service control field indicates a data rate, a burst size, a delay

bound, and a jitter bound.

17. (original):   A method of making a coordinator polling list, comprising:

when making a polling list is requested, generating a controlled contention frame

and transmitting the controlled contention frame to stations on a network through a

predetermined channel using a broadcast method after a period of time corresponding to a

priority inter-frame space lapses since receipt of the request of making a polling list;

receiving a reservation request frame from each of the stations as a response to the

controlled contention frame through the predetermined channel during a controlled contention

interval designated by the controlled contention frame;

when the reservation request frame is received, allocating a poll frame

transmission sequence to the stations, from which the reservation request frame is received,

using a first come first serve method based on a sequence in which reservation request frames

arrive and making a polling list comprising the poll frame transmission sequence.

18. (original):   The method of claim 17, further comprising:

requesting to make the polling list when the polling list is not made or when all

reservation request frames are not received from the stations having transmitted the reservation

request frames, before generating the controlled contention frame during the controlled

contention interval; and

transmitting a poll frame to each of the stations, having transmitted the

reservation request frames that are received, through the predetermined channel according to the

poll frame transmission sequence comprised in the polling list, after making the polling list.

19. (original):   The method of claim 18, wherein a length of the controlled

contention interval is proportional to the number of stations.

20. (original):   The method of claim 18, wherein the network is a basic service set

defined in IEEE 802.11 wireless LAN standards.

21. (original):   The method of claim 20, wherein the controlled contention frame

comprises a frame control field, a period/ID field, a receiver address field, a basic service set ID

field, a controlled contention interval length field, and a frame inspection sequence field;

the reservation request frame comprises a frame control field, a period/ID field, a

receiver address field, a basic service set ID field, a quality of service control field, an

association ID field, and a frame inspection sequence field;

the poll frame comprises a frame control field, a period/ID field, a receiver

address field, a basic service set ID field, a quality of service control field, a data

transmitting/receiving period length field, and a frame inspection sequence field; and

the quality of service control field indicates a data rate, a burst size, a delay

bound, and a jitter bound.

22. (currently amended):   A method of making a station polling list, comprising:

(a) receiving a controlled contention frame through a predetermined channel from

a coordinator station among stations on a network; and

(b) when the controlled contention frame is received, contending for use of the

predetermined channel according to a user priority value of a data frame during a controlled

contention interval designated by the controlled contention frame so as to acquire an exclusive

right of using the predetermined channel, generating a reservation request frame as a response to

the controlled contention frame when the exclusive right is acquired, and transmitting the

reservation request frame to the coordinator station through the predetermined channel;

wherein step (b) further comprises setting a coordination inter-frame space value

and a contention window value according to the user priority value, detecting whether the

predetermined channel is being used after a period of time corresponding to the coordination

inter-frame space value and a back-off time corresponding to the contention window value

sequentially lapse, acquiring the exclusive right of using the predetermined channel if the

predetermined channel is not being used, and resetting the contention window value to be

extended using a back-off algorithm when the exclusive right of using the predetermined channel

is not acquired because the predetermined channel is being used.

23. (canceled).

24. (original):   The method of claim 22, further comprising:

(c) receiving a poll frame transmitted through the predetermined channel from the

coordinator station according to polling frame transmission sequence comprised in a polling list;

and

(d) when the poll frame is received, transmitting the data frame to a destination

station among the stations through the predetermined channel during a data

transmitting/receiving period designated by the poll frame.

25. (original):   The method of claim 24, wherein a length of the controlled

contention interval is proportional to the number of stations.

26. (original):   The method of claim 24, wherein the network is a basic service set

defined in IEEE 802.11 wireless LAN standards.

27. (original):   The method of claim 26, wherein the controlled contention frame

comprises a frame control field, a period/ID field, a receiver address field, a basic service set ID

field, a controlled contention interval length field, and a frame inspection sequence field;

the reservation request frame comprises a frame control field, a period/ID field, a

receiver address field, a basic service set ID field, a quality of service control field, an

association ID field, and a frame inspection sequence field;

the poll frame comprises a frame control field, a period/ID field, a receiver

address field, a basic service set ID field, a quality of service control field, a data

transmitting/receiving period length field, and a frame inspection sequence field; and

the quality of service control field indicates a data rate, a burst size, a delay

bound, and a jitter bound.

28. (original):   A method of making a polling list, comprising:

(a) when making a polling list is requested, generating a controlled contention

frame and transmitting the controlled contention frame to stations on a network through a

predetermined channel using a broadcast method after a period of time corresponding to a

priority inter-frame space lapses since receipt of the request of making a polling list, and when a

reservation request frame from each of the stations is received as a response to the controlled

contention frame through the predetermined channel during a controlled contention interval

designated by the controlled contention frame, allocating a poll frame transmission sequence to

the stations, from which the reservation request frame is received, using a first come first serve

method based on a sequence in which reservation request frames arrive and making a polling list

comprising the poll frame transmission sequence; and

(b) when the controlled contention frame is received through the predetermined

channel, contending for use of the predetermined channel according to a user priority value of a

data frame during the controlled contention interval designated by the controlled contention

frame so as to acquire an exclusive right of using the predetermined channel, and when the

exclusive right is acquired, generating a reservation request frame as a response to the controlled

contention frame and transmitting the reservation request frame to the coordinator polling list

making apparatus through the predetermined channel.

29. (original):   The method of claim 28, wherein step (a) comprises requesting to

make the polling list when the polling list is not made or when all reservation request frames are

not received from the stations having transmitted the reservation request frames during the

controlled contention interval, and transmitting a poll frame to each of the stations, having

transmitted the reservation request frames that are received, through the predetermined channel

according to the poll frame transmission sequence comprised in the polling list; and

step (b) comprises when the poll frame transmitted through the predetermined

channel according to the polling frame transmission sequence comprised in the polling list is

received, transmitting the data frame to a destination station among the stations through the

predetermined channel during a data transmitting/receiving period designated by the poll frame.

30. (original):   The method of claim 29, wherein a length of the controlled

contention interval is proportional to the number of stations.

31. (original):   The method of claim 29, wherein the network is a basic service set

defined in IEEE 802.11 wireless LAN standards.

32. (original):   The method of claim 31, wherein the controlled contention frame

comprises a frame control field, a period/ID field, a receiver address field, a basic service set ID

field, a controlled contention interval length field, and a frame inspection sequence field;

the reservation request frame comprises a frame control field, a period/ID field, a

receiver address field, a basic service set ID field, a quality of service control field, an

association ID field, and a frame inspection sequence field;

the poll frame comprises a frame control field, a period/ID field, a receiver

address field, a basic service set ID field, a quality of service control field, a data

transmitting/receiving period length field, and a frame inspection sequence field;

and the quality of service control field indicates a data rate, a burst size, a delay

bound, and a jitter bound.

33. (original):   A computer readable recording medium having embodied therein a

computer program for the method of claim 17.

34. (original):   A computer readable recording medium having embodied therein a

computer program for the method of claim 22.

35. (original):   A computer readable recording medium having embodied therein

a computer program for the method of claim 28.